



ARS Grape/Wine Industry Workshop Quality (and Health)

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**Processed Foods Research Unit
Western Regional Research Center
Albany, CA**



Definition of Grape Quality

Intrinsic physical traits and chemical characteristics of grapes that result in exceptionally good grape products with high sensory appeal to consumers.



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Processed Foods Research Unit: Mission

**NP 306 – Quality Preservation, Characterization and Enhancement
and New Processes, New Uses and Value-Added Foods**

“To enhance the marketability and healthfulness of agricultural commodities and processed products such as cereal grains, legumes, fruits and vegetables through food processing and biotechnology”



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Basic Tools to Add Value and Improve Grape Quality through Processing

Processing Tools

Grinding

Dehydration

Forming

Extrusion

Juicing

Molding

Packaging



Basic Tools to Evaluate Grape and Grape Product Quality

Analytical Tools

Gas Chromatography

Mass Spectrometry

Liquid Chromatography

NIR

Electronic Nose

Colorimetry

Spectroscopy

Sensory Evaluation

Nutritional Studies



Near Infrared Transmittance Spectrometry to Evaluate Raisin Quality – Charlie Huxsoll

ARCH. ENR00000



Using a near-infrared transmittance spectrophotometer, agricultural engineer Charlie Huxsoll evaluates raisins for quality. (K7122-11)

Can be Used to Predict Raisin Quality

Moisture Content, Water Activity, Sugar Content and Acidity

Fiorini Ranch Next Generation Grape Juices



Innovative Foods Grape Products

Victor Packing Company, CA



New Technologies to Process Value-Added, Healthy Foods from Fruits and Vegetables

McHugh, Pan and Roberts



Next Generation Grape Products



Wine infused raisins

Vitamin infused raisins for U.S.
and developing countries

Extruded and formed raisin
sticks

Improving the Quality and Safety of Kishmish Bish, Green Raisins



Kishmish-khana in the middle of a vineyard



ROOTS & PEACE

USAID
FROM THE AMERICAN PEOPLE



Drying aftabi raisins on trays

"You have turned mines into vines by replacing the seeds of death with the seeds of life."

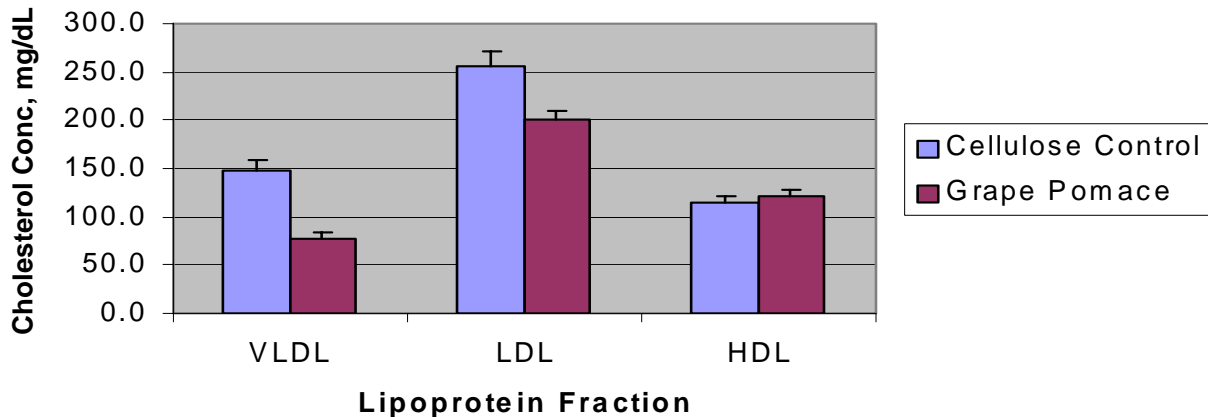
Kofi Annan, United Nations Secretary-General

Through increased understanding of the mechanism of color formation in raisins we hope to develop a new value-added process to manufacture green raisins (a new value added product) in the U.S. without the use of SO₂.

Processing and Biotechnological Improvement of Foods To Prevent Obesity and Related Degenerative Diseases

Wally Yokoyama

Cholesterol Lowering by Grape Skins
Means \pm SEM



Future Research Areas

Skin's function as a protectant makes it an excellent source of disease preventative compounds.

Does processing increase bioavailability – grinding of skins?

Relative role of fiber, protein, and phytonutrients in skins for disease prevention.

Effects of different types of processing on bioavailability and final health promoting benefits.

Development of new value added foods.

Comparison studies on nutritional benefits of fresh versus processed grape products.